

### **REMARKS**

Claims 1-14 are pending. Claims 1-6 and 10-14 have been amended.

Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

Entry of this Amendment is respectfully requested since no new issues are raised by entry of the Amendment and it places the application in condition for allowance, or at least in better form for appeal.

#### ***Claim Rejections Under 35 U.S.C. § 101***

Claims 1-14 were rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. Applicants have amended the claims and respectfully submit that the amended claims are statutory. Specifically, applicants have amended the claims to more clearly recite that the turbo rate encoder is an apparatus (i.e., not merely an abstract matrix as was alleged to be possible by the Examiner). Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

#### ***Claim Rejections Under 35 U.S.C. § 103***

Claims 1-14 were rejected under 35 U.S.C. § 103(a) over Tong et al. (U.S. Patent No. 6,744,744) in view of Wang et al. (U.S. Patent No. 6,014,411). Applicants respectfully traverse this rejection.

Claim 1 recites a turbo code encoder that includes a first convolutional encoder that generates N systematic bits and N first parity bits and a second convolutional encoder that generates N second parity bits. The 3N total bits are then input into a repeater which repeatedly outputs predefined bits among the 3N total bits such that the ratio of systematic bits to parity bits is at least one systematic bit to every one parity bit. As admitted in the Office Action, on page 7, Tong fails to teach or even suggest, a repeater which repeatedly outputs predefined bits among the 3N total bits such that the ratio of systematic bits to parity bits is at least one systematic bit to every one parity bit, as recited in claim 1. The Office Action alleges that Wang remedies the admitted deficiency of Tong. Applicants respectfully disagree.

Wang discloses a repetitive turbo encoder decoder system in which repetition and puncturing are used. Specifically, in Wang, the encoder output into the noisy channel outputs three blocks of  $rN+m$  bits from data  $u_k$ ,  $e_{1k}$ , and  $e_{2k}$  (See, for example, column 17, lines 5-15 and columns 19 and 20 and Figure 5). There is no teaching or suggestion in

Wang that the repetitive turbo encoder shown in Figure 5 outputs predefined bits among the  $3N$  total bits such that the ratio of systematic bits to parity bits is at least one systematic bit to every one parity bit, as recited in claim 1. In fact, if the systematic bits are repeater and/or punched, as shown in Figure 5, the number of bits entering the encoder varies and is not  $3N$  and, even further, there is no teaching that the bits are output in a manner that creates at least a 1 to 1 ratio of systematic bits to parity bits.

Accordingly, no combination of Tong and Wang teach or suggest a repeater which repeatedly outputs predefined bits among the  $3N$  total bits such that the ratio of systematic bits to parity bits is at least one systematic bit to every one parity bit, as recited in claim 1.

Similarly, claims 6 and 10 are believed allowable for at least the reasons presented above with respect to claim 1 because claims 6 and 10 recite similar features to those discussed above with respect to claim 1.

Claims 2-5, 7-9, and 11-14 are believed allowable for at least the reasons presented above with respect to claims 1, 6, and 10 by virtue of their dependence upon claims 1, 6, and 10. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

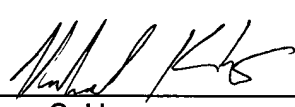
### ***Conclusion***

Therefore, all objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Should any issues remain unresolved, the Examiner is encouraged to contact the undersigned attorney for Applicants at the telephone number indicated below in order to expeditiously resolve any remaining issues.

Respectfully submitted,

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